What Is Claimed Is:

1. Turbo generator with a rotor with direct gas cooling, which rotor is provided with a rotor winding arranged around a central rotor body, said rotor winding being on the front sides covered by one each annular cap plate, and in which rotor cold cooling gas for cooling the rotor flows into ring gap segments between the cap plate and the rotor body, whereby the ring gap segments are bordered, when seen in circumferential direction, on the sides in each case by the section of an end spacer plate provided between the cap plate and the rotor winding, whereby this section is projecting into the ring gap, wherein separations of the cooling gas stream on flowing into the ring gap segments are avoided by designing the sections of the end spacer plates, whereby these sections adjoin the ring gap, in a manner that is advantageous with respect to the flow.

2. Turbo generator as claimed in Claim 1, wherein, when seen in circumferential direction, the side edges of the sections of the end spacer plates, whereby said sections are projecting into the cooling gas stream, are provided with either a bevel or bezel.

3. Turbo generator as claimed in Claim 1, wherein, when seen in circumferential direction, the side edges of the sections of the end spacer plates, whereby said sections are projecting into the cooling gas stream, are provided with a curvature with one or more curvature radii adapted to the stream.

4. Turbo generator as claimed in Claim 2, whereni the end spacer plates with the beveled or rounded sections on the front side close off a warm gas chamber defined on the sides by two axial, parallel chamber walls, and that the beveled or rounded sections terminate flush with the chamber walls.

5. Turbo generator as claimed in Claim 2, wherein one each additional gas guidance segment that guides the cooling gas stream around the section is provided in the flow direction upstream from the sections of the end spacer plates.

6. Turbo generator as claimed in Claim 5, wherein the gas guidance segment is provided upstream from the section, separated from it by a gap, and that it is provided with a convex curved outside facing the cooling gas stream.

7. Turbo generator as claimed in Claim 6, wherein the gas guidance segment has essentially the same length in circumferential direction as the section of the end spacer plate and forms a unit with the section with respect to flow technology.

8. Turbo generator as claimed in Claim 6, wherein the section of the end spacer plate and the preceding gas guidance segment are designed so that cooling gas is pressed from the inlet side into the gap against the rotation direction of the rotor.

9. Turbo generator as claimed in Claim 8, wherein the gas guidance segment in the rotation direction of the rotor projects with at least its front edge beyond the section of the end spacer plate.

10. Turbo generator as claimed in Claim 8, wherein the gas guidance segment is designed at its edge, that is, in the rear in the rotation direction of the rotor, in such a way that the cooling gas stream flowing through the gap is added to the cooling gas stream flowing into the adjoining ring gap segment essentially without a transition.

11. Turbo generator as claimed in Claim 10, wherein the gas guidance segment is provided with an inwardly curved nose at the edge located in the rear in the rotation direction of the rotor.

12. Turbo generator as claimed in Claim 5, wherein the gas guidance segment is attached to the cap plate.

13. Turbo generator as claimed in Claim 2, wherein the section of the end spacer plate projects into the ring gap, has a greater thickness than the remaining part of the end spacer plate and projects with its side facing the cooling gas stream into the space below the cap plate.